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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/663,103 | 09/16/2003 | John D. Reed | CS23599RL | 1627 |

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| EXAMINER |
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DEAN, RAYMOND S

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| ART UNIT | PAPER NUMBER |
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2618

DATE MAILED: 12/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

| | | |
|-----------------|--------------|--|
| Application No. | Applicant(s) | |
| 10/663,103 | REED ET AL. | |
| Examiner | Art Unit | |
| Raymond S. Dean | 2618 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>0806</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed September 29, 2006 have been fully considered but they are not persuasive.

Examiner respectfully disagrees with Applicant's assertion that Chen does not teach "establishing a headroom value based on the communication variance condition". Chen, as indicated in the Office Action date July 3, 2006, teaches a headroom value, which is the margin that enables the adjustment of power so that voice and data communications are maintained during changes in the channel condition, thus the headroom accounts for the changes in the channel condition (See Cols: 17 lines 64 – 67, 18 lines 1 – 14). Chen teaches, as shown in Col. 18 lines 9 – 14, that headroom allows the power control mechanism to adjust the transmit power to combat changes in the channel condition thus the headroom value accounts for the changes in the channel condition.

Examiner agrees with Applicant that the data rate of Bao is not based on a headroom value, however, Chen was cited for teaching this feature (See Chen Cols: 6 lines 58 – 60, 7 lines 41 – 51, 18 lines 9 – 14).

Examiner respectfully disagrees with Applicant's assertion on Page 5, 2nd Paragraph of the Remarks "Neither Chen nor Rezaiifar or suggest establishing a headroom value ..." for the same reasons as set forth above. Additionally, Rezaiifar, as indicated in the Office Action date July 3, 2006, teaches a base station establishing a

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headroom value based on the communication channel variance condition (See Section 0096).

2. Applicant's arguments, see remarks filed September 29, 2006 with respect to the rejection(s) of claim(s) 5 – 6, 15, and 19 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art Corazza (US 6,563,810).

Corazza teaches detecting a battery condition of the mobile station; and modifying the headroom value based on the battery condition (Col. 6 lines 30 – 51, the headroom value, R sub Step2, is dependent on the maximum transmit power, which is dependent on the amount of battery energy, the headroom value is thus dependent on said battery energy by virtue of it's dependence on the maximum transmit power).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Chen with headroom adjustment method of Corazza for the purpose providing an alternative means of determining a maximum data rate.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 – 2, 12, and 16 – 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen et al. (5,923,650).

Regarding Claim 1, Chen teaches a method for establishing headroom for a mobile station operating in a wireless communication system comprising the steps of: determining a communication channel variance condition (Cols: 17 lines 64 – 67, 18 lines 1 – 14, the headroom value enables the power control mechanism to adjust the transmit power in response to a change in the channel condition thus a change in the channel conditions will be detected); and establishing a headroom value based on the communication channel variance condition (Cols: 17 lines 64 – 67, 18 lines 1 – 14, the headroom is the margin that enables the adjustment of power so that voice and data communications are maintained during changes in the channel condition thus the headroom accounts for the changes in the channel condition).

Regarding Claim 2, Chen teaches all of the claimed limitations recited in Claim 1. Chen further teaches wherein the mobile station performs the steps of determining and establishing (Col. 18 lines 1 – 14).

Regarding Claim 12, Chen teaches a mobile station comprising: means for determining a communication channel variance condition (Cols: 17 lines 64 – 67, 18 lines 1 – 14, the headroom value enables the power control mechanism to adjust the transmit power in response to a change in the channel condition thus a change in the channel conditions will be detected); and means for establishing a headroom value

based on the communication channel variance condition (Cols: 17 lines 64 – 67, 18 lines 1 – 14, the headroom is the margin that enables the adjustment of power so that voice and data communications are maintained during changes in the channel condition thus the headroom accounts for the changes in the channel condition).

Regarding Claim 16, Chen teaches a wireless communication system comprising: a base station; at least one mobile station (Figure 1); means for determining a communication channel variance condition (Cols: 17 lines 64 – 67, 18 lines 1 – 14, the headroom value enables the power control mechanism to adjust the transmit power in response to a change in the channel condition thus a change in the channel conditions will be detected); and means for establishing a headroom value based on the communication channel variance condition (Cols: 17 lines 64 – 67, 18 lines 1 – 14, the headroom is the margin that enables the adjustment of power so that voice and data communications are maintained during changes in the channel condition thus the headroom accounts for the changes in the channel condition).

Regarding Claim 17, Chen teaches all of the claimed limitations recited in Claim 16. Chen further teaches means for determining a data rate based on the headroom value (Col. 18 lines 9 – 14).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3 – 4, 13 – 14, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (5,923,650) in view of Bao et al. (US 2003/0081627).

Regarding Claims 3, 13, Chen teaches all of the claimed limitations recited in Claims 2, 12. Chen further teaches wherein the mobile station determines a maximum data rate based on the headroom value (Cols: 6 lines 58 – 60, 7 lines 41 – 51, 18 lines 9 – 14).

Chen does not teach the mobile station sending the maximum data rate to a base station.

Bao teaches mobile station sending the maximum data rate to a base station (Section 0031 lines 4 – 7, indicates the data rate).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Chen with the data rate method of Bao for the purpose of adjusting the data rate according to the actual requirements and operating environment of the system as taught by Bao.

Regarding Claims 4, 14, Chen teaches all of the claimed limitations recited in Claims 2, 12. Chen further teaches wherein the mobile station determines a maximum data rate based on the headroom value (Cols: 6 lines 58 – 60, 7 lines 41 – 51, 18 lines 9 – 14).

Chen does not teach the mobile station sending a rate adjustment request to a base station.

Bao teaches mobile station sending a rate adjustment request to a base station (Section 0031 lines 4 – 7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Chen with the data rate method of Bao for the purpose of adjusting the data rate according to the actual requirements and operating environment of the system as taught by Bao.

Regarding Claim 18, Chen teaches all of the claimed limitations recited in Claim 17. Chen does not teach means for sending the data rate between the base station and said at least one mobile station.

Bao teaches sending the data rate between a base station and a mobile station (Section 0031 lines 4 – 7, indicates the data rate).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Chen with the data rate circuitry of Bao for the purpose of adjusting the data rate according to the actual requirements and operating environment of the system as taught by Bao.

7. Claims 5 – 6, 15, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (5,923,650) in view of Corazza (US 6,563,810).

Regarding Claims 5, 15, 19, Chen teaches all of the claimed limitations recited in Claims 2, 12, 16. Chen does not teach detecting a battery condition of the mobile station; and modifying the headroom value based on the battery condition.

Corazza teaches detecting a battery condition of the mobile station; and modifying the headroom value based on the battery condition (Col. 6 lines 30 – 51, the headroom value, R sub Step2, is dependent on the maximum transmit power, which is dependent on the amount of battery energy, the headroom value is thus dependent on said battery energy by virtue of it's dependence on the maximum transmit power).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Chen with headroom adjustment method of Corazza for the purpose providing an alternative means of determining a maximum data rate.

Regarding Claim 6, Chen in view of Corazza teaches all of the claimed limitations recited in Claim 5. Corazza further teaches determining if the battery condition relates to a low battery level; and if the battery condition relates to a low battery level, increasing the headroom value (Col. 6 lines 30 – 51, the headroom value, R sub Step2, is dependent on the maximum transmit power, which is dependent on the amount of battery energy, the headroom value is thus dependent on said battery energy by virtue of it's dependence on the maximum transmit power).

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (5,923,650) in view of Czaja et al. (US 7,023,822).

Regarding Claim 7, Chen teaches all of the claimed limitations recited in Claim 2. Chen does not teach wherein determining a communication channel variance condition includes measuring a variance in a primary pilot power.

Czaja teaches measuring a primary pilot power (Column 2 lines 35 – 43, lines 48 – 49, Column 3 lines 15 – 16, Column 10 lines 47 – 54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the pilot power measurement method of Czaja in the mobile stations of Chen for the purpose of determining the proper time to perform a handoff initiation as taught by Czaja.

9. Claims 8 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (5,923,650) in view of Rezaiifar et al. (US 2003/0002464).

Regarding Claim 8, Chen teaches all of the claimed limitations recited in Claim 1. Chen further teaches wherein a base station performs the step of determining (Column 17 lines 54 – 55, the measurement of the energy-per-bit-to-noise-plus-interference ratio is a metric of a channel condition).

Chen does not the step of establishing.

Rezaiifar teaches the step of establishing (Sections 0095 – 0096, the base station establishes the headroom value via 4 bits).

Chen and Rezaiifar both teach a CDMA system in which a headroom value is established thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the headroom establishment method of Rezaiifar as an alternative means for establishing a headroom value.

Regarding Claim 9, Chen in view of Rezaiifar teaches all of the claimed limitations recited in Claim 8. Chen further teaches examination of an inner loop power control bit stream (Col. 17 lines 54 – 61).

Regarding Claim 10, Chen in view of Rezaiifar teaches all of the claimed limitations recited in Claim 8. Rezaiifar further teaches sending the headroom value to the mobile station (Sections 0095 – 0096, the max rate possible, which comprises the headroom value, is sent to the mobile station so that said mobile station can transmit at a particular data rate on the reverse link).

Regarding Claim 11, Chen in view of Rezaiifar teaches all of the claimed limitations recited in Claim 8. Chen further teaches determining a data rate assignment for a mobile station using the headroom value (Col. 18 lines 9 – 14) and sending the data rate assignment to the mobile station (Cols. 6 lines 58 – 60, 7 lines 41 – 51).

10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et. al. (5,923,650) in view of Corazza (US 6,563,810) as applied to Claim 19 above, and further in view of Bao et al. (US 2003/0081627)

Regarding Claim 20, Chen in view of Corazza teaches all of the claimed limitations recited in Claim 19. Chen further teaches means for determining data rate based on the headroom value (Cols: 6 lines 58 – 60, 7 lines 41 – 51, 18 lines 9 – 14).

Chen in view of Corazza does not teach means for sending the data rate between said at least one mobile station and the base station.

Bao teaches means for sending the data rate between a mobile station and a base station (Section 0031 lines 4 – 7, indicates the data rate).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Chen in view of Corazza with the data rate method of Bao for the purpose of adjusting the data rate according to the actual requirements and operating environment of the system as taught by Bao.

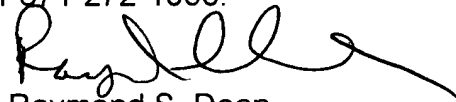
Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S. Dean whose telephone number is 571-272-7877. The examiner can normally be reached on Monday-Friday 6:00-2:30.

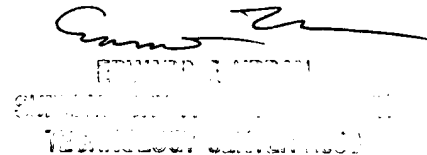
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Raymond S. Dean
November 30, 2006



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